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     (FILE 'HOME' ENTERED AT 11:51:10 ON 21 JUN 2003)

     INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
     BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
     CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DDFB,
     DDFU, DGENE, DRUGB, DRUGLAUNCH, DRUGMONOG2, ...' ENTERED AT 11:51:22 ON
     21 JUN 2003
               SEA ENDOGLUCANASE
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                 1   FILE ADISCTI
               526   FILE AGRICOLA
                15   FILE ANABSTR
                25   FILE AQUASCI
               341   FILE BIOBUSINESS
                13   FILE BIOCOMMERCE
              1815   FILE BIOSIS
               860   FILE BIOTECHABS
               860   FILE BIOTECHDS
               852   FILE BIOTECHNO
               669   FILE CABA
                15   FILE CANCERLIT
              2864   FILE CAPLUS
               442   FILE CEABA-VTB
                 7   FILE CIN
                29   FILE CONFSCI
                 2   FILE CROPB
                16   FILE CROPU
              1780   FILE DGENE
                 1   FILE DRUGU
                12   FILE EMBAL
               840   FILE EMBASE
               626   FILE ESBIOBASE
                32   FILE FEDRIP
                 1   FILE FOREGE
                80   FILE FROSTI
               517   FILE FSTA
              1041   FILE GENBANK
                 2   FILE HEALSAFE
               186   FILE IFIPAT
               115   FILE JICST-EPLUS
                 4   FILE KOSMET
               985   FILE LIFESCI
               885   FILE MEDLINE
                40   FILE NTIS
                 7   FILE OCEAN
               840   FILE PASCAL
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              1678   FILE SCISEARCH
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               684   FILE USPATFULL
                20   FILE USPAT2
                19   FILE VETU
               170   FILE WPIDS
               170   FILE WPINDEX
L1               QUE ENDOGLUCANASE
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     FILE 'CAPLUS, BIOSIS, DGENE, SCISEARCH, GENBANK, LIFESCI, MEDLINE,
     BIOTECHDS, BIOTECHNO, EMBASE' ENTERED AT 11:53:24 ON 21 JUN 2003
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L2          2756 S L1 AND (EGL6 OR REESEI)
L3             5 S L2 AND (EGL6 OR EGVI OR EG-VI)
L4          2752 S L2 AND REESEI
L5             3 DUP REM L3 (2 DUPLICATES REMOVED)
L6            54 S L2 AND (CHIMER OR HYBRID)
L7             7 S L6 AND ASPERGILLUS
L8             4 DUP REM L7 (3 DUPLICATES REMOVED)
L9             0 S L6 AND (SIGNAL SEQUENCE)
L10           70 S L4 AND (SIGNAL SEQUENCE OR SIGNAL PEPTIDE)
L11            0 S L10 AND (ASPERGILLUS HOST)
L12           16 S L10 AND (ASPERGILLUS)
L13           10 DUP REM L12 (6 DUPLICATES REMOVED)

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L5 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:473111 CAPLUS
TITLE: **EGVI endoglucanase** and nucleic acids encoding the same
INVENTOR(S): Dunn-Coleman, Nigel; Goedegebuur, Frits; Ward, Michael; Yao, Jian
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003113732	A1	20030619	US 2001-26994	20011218

PRIORITY APPLN. INFO.: US 2001-26994 20011218

AB The present invention provides a novel **endoglucanase** nucleic acid sequence, designated **egl6**, and the corresponding **EGVI** amino acid sequence. The invention also provides expression vectors and host cells comprising a nucleic acid sequence encoding **EGVI**, recombinant **EGVI** proteins and methods for producing the same.

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
ACCESSION NUMBER: 1998:803233 CAPLUS
DOCUMENT NUMBER: 130:178077
TITLE: Expression and secretion of Trichoderma **endoglucanase** in Saccharomyces cerevisiae
AUTHOR(S): Shin, Dong-Ha; Kim, Jae-Bum; Kim, Byung-Woo; Nam, Soo-Wan; Shin, Ji-Won; Chung, Dae-Kyun; Jeong, Choon-Soo
CORPORATE SOURCE: Department of Microbiology, Dong-Eui University, Pusan, 614-714, S. Korea
SOURCE: Sanop Misaengmul Hakhoechi (1998), 26(5), 406-412
CODEN: SMHAEH; ISSN: 0257-2389
PUBLISHER: Korean Society for Applied Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: Korean

AB The **endoglucanase** gene, **egl6**, of Trichoderma sp. was linked to the yeast ADH1 promoter and the resultant plasmid (pVT-C4) was introduced into three S. cerevisiae host strains (YNN27, 2805, and SEY2102). Among each 80 transformants, the cell growth and expression level of **endoglucanase** were compared in test-tube cultivation, and 3 resp. transformants for each host cells showing the highest expression level and cell growth were selected. When 3 recombinant yeast cells were batchwise cultivated for 48 h in flask, the total activities of **endoglucanase** expressed were about 1140 unit/L with 2805/pVT-C4, 1020 unit/L with SEY2102/pVT-C4, and 590 unit/L with YNN27/pVT-C4. Irresp. of host strain, about 80% of the expressed **endoglucanase** was detected in the extracellular medium. In addn., it was also found that the recombinant enzyme was secreted into the culture medium as 2 major forms of lightly and heavily glycosylated proteins.

L5 ANSWER 3 OF 3 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 97:742565 SCISEARCH
THE GENUINE ARTICLE: XZ128
TITLE: Enzymatic properties of cellulases from Humicola insolens
AUTHOR: Schulein M (Reprint)
CORPORATE SOURCE: NOVO NORDISK AS, NOVO ALLE, DK-2880 BAGSVAERD, DENMARK (Reprint).
COUNTRY OF AUTHOR: DENMARK
SOURCE: JOURNAL OF BIOTECHNOLOGY, (16 SEP 1997) Vol. 57, No. 1-3,

pp. 71-81.
Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.
ISSN: 0168-1656.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE; AGRI
LANGUAGE: English
REFERENCE COUNT: 35

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB We present the analysis of the activities towards soluble and insoluble substrates of seven cellulases cloned from the saprophytic fungus Humicola insolens. The activity on the soluble polymer substrate carboxymethylcellulose (CMC) was used to determine the pH activity profiles of the five **endoglucanases** (EG), whereas cellotriose and reduced cellohexaose were used to determine the pH activity profiles of cellobiohydrolase I (CBH) and CBH II. All the EGs show optimal activity between pH 7 and 8.5, while CBH I and CBH II peak around pH 5.5 and 9, respectively. The catalytic activities of five of these cellulases were investigated under neutral and alkaline conditions using reduced cellohexaose as a substrate in a cellobiose oxidase coupled assay. EG I and CBH I both belong to family (7) according to a recent classification of glycosyl hydrolases. They both have activity against cellotriose. Therefore, they were studied using a coupled assay involving glucose oxidase. The activity on insoluble substrate (phosphoric-acid swollen cellulose) was assessed by the formation of reducing groups. The presence of a cellulose binding domain (CBD) lowers the apparent K-M. This can be explained by the dispersing action of CBD. However, the CBD also reduces the apparent k(cat) probably by slowing down the mobility. EG I, EG II and EG III show similar activity towards CMC and amorphous cellulose, while EG V, **EG VI**, CBH I and CBH II have the highest catalytic rate on amorphous cellulose, In summary, Humicola insolens possesses a battery of cellulose-degrading enzymes which cooperate in the efficient hydrolysis of cellulose. (C) 1997 Elsevier Science B.V.

L13 ANSWER 9 OF 10 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT AND ISI
ACCESSION NUMBER: 1988-00529 BIOTECHDS
TITLE: Expression, glycosylation and secretion of fungal hydrolases in yeast;
Saccharomyces cerevisiae; glucoamylase, cellobiohydrolase, cellulase and rennin protease expression
AUTHOR: Yoshizumi H; Ashikari T
CORPORATE SOURCE: Suntory
LOCATION: Laboratories of Applied Microbiology, Research Center, Suntory Ltd., 1-1-1 Wakayama-dai, Shimamoto-cho, Mishima-gun, Osaka, Japan.
SOURCE: Trends Biotechnol.; (1987) 5, 10, 277-81
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Recombinant DNA technology is expected to improve the productivity, stability and substrate specificity of industrial hydrolases. Expression, glycosylation and secretion of fungal hydrolases (glucoamylase (EC-3.2.1.3) from **Aspergillus** niger, **Aspergillus** oryzae and Rhizopus oryzae; cellobiohydrolases I and II (EC-3.2.1.91) from Trichoderma **reesei**; **endoglucanase** I (cellulase, EC-3.2.1.4), from T. **reesei**, and rennin protease from Mucor pusillus) in yeast (Saccharomyces cerevisiae) are reviewed. The effect of the properties of genes and gene products on production and secretion of the enzymes in yeast is discussed. Modification of the promoters and introns was necessary to express some fungal hydrolase genes in yeast. The intronless fungal genes are expressed efficiently in yeast under control of a yeast gene promoter, and the synthesized proteins were secreted into the culture medium. Protein secretion is considered with respect to **signal peptides** and glycosylation. (39 ref)

13 ANSWER 8 OF 10 BIOTECHDS COPYRIGHT 2003 THOMSON DERWENT AND ISI
ACCESSION NUMBER: 1988-01123 BIOTECHDS
TITLE: Vector for Trichoderma **reesei** etc. transformation; containing a gene encoding a desired product, e.g. chymosin or cellulase
PATENT ASSIGNEE: Alko
PATENT INFO: EP 244234 4 Nov 1987
APPLICATION INFO: EP 1987-303834 29 Apr 1987
PRIORITY INFO: GB 1986-10600 30 Apr 1986
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1987-308454 [44]

AB A vector system for transformation of Trichoderma comprises (a) a gene encoding a desired protein product; (b) functions facilitating gene expression including promoters/enhancers, and (c) a selection marker. Also claimed are Trichoderma strains stably transformed with the vector system, e.g. Trichoderma **reesei**, for the production of a protein product, e.g. prochymosin or T. **reesei** **endoglucanase** (cellulase, EC-3.2.1.4). The vector system provides a high level expression and secretion of the desired protein when the transformed microorganism is grown in a suitable culture medium. The system can produce heterologous proteins or enhance the production of homologous proteins. Suitable signal/leader and promoter sequences are the T. **reesei** cbh1 and **Aspergillus** glucoamylase (EC-3.2.1.3) **signal sequences** and promoters. The selection marker is e.g. **Aspergillus** nidulans amdS gene, A. nidulans or T. **reesei** argB gene, or Neurospora crassa or T. **reesei** pyr4 gene. The vector system may comprise at least 2 plasmids or vectors. (50pp)

L13 ANSWER 7 OF 10 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 93:587373 SCISEARCH
THE GENUINE ARTICLE: LY562
TITLE: SECRETION OF THE HORMOCONIS-RESINAE GLUCOAMYLASE-P ENZYME FROM TRICHODERMA-**REESEI** DIRECTED BY THE NATURAL AND THE CBH1 GENE SECRETION SIGNAL
AUTHOR: JOUTSJOKI V V (Reprint); KUITTINEN M; TORKKELI T K; SUOMINEN P L
CORPORATE SOURCE: ALKO LTD, RES LABS, POB 350, SF-00101 HELSINKI, FINLAND (Reprint)
COUNTRY OF AUTHOR: FINLAND
SOURCE: FEMS MICROBIOLOGY LETTERS, (15 SEP 1993) Vol. 112, No. 3, pp. 281-286.
ISSN: 0378-1097.
DOCUMENT TYPE: Article; Journal
FILE SEGMENT: LIFE
LANGUAGE: ENGLISH
REFERENCE COUNT: 25

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Secretion of the Hormoconis resinae glucoamylase P (GAMP) enzyme from Trichoderma **reesei** using either the natural N-terminal extension of the premature glucoamylase P or the cellobiohydrolase I (CBHI) **signal peptide** was examined. The expression conditions for the heterologous glucoamylase P (gamP) gene in T. **reesei** were standardized by targeting one copy of a plasmid fragment, containing the gamP gene, to the cbh1 locus of the host. The results showed that the transient N-terminal extension of the premature GAMP acts as an efficient secretion signal in T. **reesei** and leads to a higher yield of extracellular glucoamylase activity than does the **signal peptide** of CBHI.

L13 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 1994:321523 CAPLUS
DOCUMENT NUMBER: 120:321523
TITLE: Manufacture of phytate-degrading enzymes in Trichoderma using an overexpression system
INVENTOR(S): Nevalainen, Helena K. M.; Paloheimo, Marja T.; Miettinen-Oinonen, Arja S. K.; Torkkeli, Tuula K.; Cantrell, Michael; Piddington, Cristopher; Rambosek, John A.; Turunen, Marja K.; Fagerstrom, Richard B.
PATENT ASSIGNEE(S): Alko Ltd., Finland
SOURCE: PCT Int. Appl., 142 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 10
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9403612	A1	19940217	WO 1993-FI310	19930730
W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
US 5780292	A	19980714	US 1992-923724	19920731
AU 9347103	A1	19940303	AU 1993-47103	19930730
EP 659215	A1	19950628	EP 1993-917804	19930730
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, NL, PT, SE				
JP 08501685	T2	19960227	JP 1993-505043	19930730
FI 9500202	A	19950317	FI 1995-202	19950117

PRIORITY APPLN. INFO.:
US 1992-923724 A 19920731
US 1987-44077 B1 19870429
US 1990-496155 A2 19900319
WO 1993-FI310 W 19930730

AB The phytase and pH 2.5 acid phosphatase of **Aspergillus** niger are manufd. in Trichoderma using a highly efficient overexpression system for use in the processing of plant material for animal feed. Manuf. of the enzymes in Trichoderma results in the formation of a mixt. of extracellular enzymes including **endoglucanase** and cellobiohydrolase that improves the effectiveness of phytase in phosphatase in processing of plant material. The highest levels of expression are achieved using the T. **reesei** cbh1 promoter and the endogenous **signal sequence** of the gene or of the cbh1 gene to direct secretion. The enzymes were purified from culture filtrates chromatog. and tryptic peptides sequenced and oligonucleotides derived from them used to screen a Sau3A partial bank in .lambda.DASHII to obtain an acid phosphatase clone that was converted to a cDNA for expression by PCR. A partial phytase cDNA was prepd. by nested PCR and used to screen a gene bank for the gene. Fusions of the cbh1 promoter and the phytase **signal sequence** and gene, or of the cbh1 promoter and **signal sequence** and the phytase gene were prepd. by PCR with care taken to optimize sepn. of the elements. T **reesei** transformed with these constructs yielded the phytase with activities of up to 3,500 units/mL depending upon the host strain and the construct and the phys. form of the transforming DNA with linear DNA with the min. of Escherichia coli plasmid sequences.

L13 ANSWER 2 OF 10 SCISEARCH COPYRIGHT 2003 THOMSON ISI
ACCESSION NUMBER: 1999:274327 SCISEARCH
THE GENUINE ARTICLE: 182ZU
TITLE: Heterologous expression of genes in filamentous fungi
AUTHOR: Kruszewska J S (Reprint)
CORPORATE SOURCE: POLISH ACAD SCI, INST BIOCHEM & BIOPHYS, A PAWINSKIEGO 5A, PL-02106 WARSAW, POLAND (Reprint)
COUNTRY OF AUTHOR: POLAND
SOURCE: ACTA BIOCHIMICA POLONICA, (MAR 1999) Vol. 46, No. 1, pp. 181-195.
Publisher: ACTA BIOCHIMICA POLONICA, PASTEURA 3, 02-093 WARSAW, POLAND.
ISSN: 0001-527X.
DOCUMENT TYPE: General Review; Journal
FILE SEGMENT: LIFE
LANGUAGE: English
REFERENCE COUNT: 96

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB Isolation of some biologically important proteins from natural sources was found to be too expensive or scarcely possible (human proteins). The problem could be solved by expression of heterologous genes.

Many biologically active proteins have been successfully expressed in filamentous fungi, some of them, however, at a low level. Thus, improvement of this technique appears to be a very important task. The process comprises several steps, Some of them, such as efficient transformation, vector construction, processing of **signal sequences**, post-translational modifications and secretion of the expressed proteins, have been intensively investigated.

This review presents obstacles and problems encountered in expression of heterologous genes and discusses strategies of development in this area.

WEST

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Search Results -

Terms	Documents
L3 same (egl6 or EGVI or EG-VI)	1

Database: US Patents Full-Text Database; US Pre-Grant Publication Full-Text Database; JPO Abstracts Database; EPO Abstracts Database; Derwent World Patents Index; IBM Technical Disclosure Bulletins

Search: L4

Refine Search

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Search History

DATE: Saturday, June 21, 2003 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ			
L4	L3 same (egl6 or EGVI or EG-VI)	1	L4
L3	L1 same (reesei)	164	L3
L2	L1 same (aspergillus or host)	226	L2
L1	endoglucanase	950	L1

END OF SEARCH HISTORY

WEST

Generate Collection Print

L2: Entry 100 of 226 File: USPT Jul 24, 2001

DOCUMENT-IDENTIFIER: US 6265204 B1
TITLE: DNA sequences, vectors, and fusion polypeptides for secretion of polypeptides in filamentous fungi

Detailed Description Text (5):
The "first nucleic acid" encodes a signal polypeptide functional as a secretory sequence in a first filamentous fungus. Such signal sequences include those from glucoamylase, .alpha.-amylase and aspartyl proteases from Aspergillus awamori, Aspergillus niger, Aspergillus oryzae, signal sequences from cellobiohydrolase I, cellobiohydrolase II, endoglucanase I, endoglucanase II, endoglucanase III from Trichoderma, signal sequences from glucoamylase from Neurospora and Humicola as well as signal sequences from eukaryotes including the signal sequence from bovine chymosin, human tissue plasminogen activator, human interferon and synthetic consensus eukaryotic signal sequences such as that described by Gwynne et al. (1987) supra. Particularly preferred signal sequences are those derived from polypeptides secreted by the expression host used to express and secrete the fusion polypeptide. For example, the signal sequence from glucoamylase from Aspergillus awamori is preferred when expressing and secreting a fusion polypeptide from Aspergillus awamori.

Detailed Description Text (7):
As used herein, "second nucleic acids" encode all or part of "secreted polypeptides" normally expressed from filamentous fungi. Such secreted polypeptides include glucoamylase, .alpha.-amylase and aspartyl proteases from Aspergillus niger, Aspergillus niger var. awamori, and Aspergillus oryzae, cellobiohydrolase I, cellobiohydrolase II, endoglucanase I and endoglucanase III from Trichoderma and glucoamylase from Neurospora and Humicola species. As with the first nucleic acids, preferred secreted polypeptides are those which are naturally secreted by the filamentous fungal expression host. Thus, for example when using Aspergillus niger var. awamori, preferred secreted polypeptides are glucoamylase and .alpha.-amylase from Aspergillus niger var. awamori, most preferably glucoamylase.

Other Reference Publication (12):
Gwynne, D.I. et al., "Genetically Engineered Secretion of Active Human Interferon and a Bacterial Endoglucanase from Aspergillus Nidulans," Bio/Technology., 5:713-719, (1987).

L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1

ACCESSION NUMBER: 1998:803233 CAPLUS
DOCUMENT NUMBER: 130:178077
TITLE: Expression and secretion of Trichoderma **endoglucanase** in Saccharomyces cerevisiae
AUTHOR(S): Shin, Dong-Ha; Kim, Jae-Bum; Kim, Byung-Woo; Nam, Soo-Wan; Shin, Ji-Won; Chung, Dae-Kyun; Jeong, Choon-Soo
CORPORATE SOURCE: Department of Microbiology, Dong-Eui University, Pusan, 614-714, S. Korea
SOURCE: Sanop Misaengmul Hakhoechi (1998), 26(5), 406-412
CODEN: SMHAEH; ISSN: 0257-2389
PUBLISHER: Korean Society for Applied Microbiology
DOCUMENT TYPE: Journal
LANGUAGE: Korean

AB The **endoglucanase** gene, **egl6**, of Trichoderma sp. was linked to the yeast ADH1 promoter and the resultant plasmid (pVT-C4) was introduced into three S. cerevisiae host strains (YNN27, 2805, and SEY2102). Among each 80 transformants, the cell growth and expression level of **endoglucanase** were compared in test-tube cultivation, and 3 resp. transformants for each host cells showing the highest expression level and cell growth were selected. When 3 recombinant yeast cells were batchwise cultivated for 48 h in flask, the total activities of **endoglucanase** expressed were about 1140 unit/L with 2805/pVT-C4, 1020 unit/L with SEY2102/pVT-C4, and 590 unit/L with YNN27/pVT-C4. Irresp. of host strain, about 80% of the expressed **endoglucanase** was detected in the extracellular medium. In addn., it was also found that the recombinant enzyme was secreted into the culture medium as 2 major forms of lightly and heavily glycosylated proteins.